

Appl. No. 10/822,102  
Amdt. dated April 11, 2005  
Reply to Office Action of January 11, 2005

PATENT

**Amendments to the Drawings:**

The attached sheet of drawings includes changes to Fig. 12. This sheet, which includes Fig. 12 replaces the original sheet including Fig. 12.

Attachment: Replacement Sheet  
Annotated Sheet Showing Changes

**REMARKS/ARGUMENTS**

Claims 21-24 are pending. Claim 21 has been amended. Claims 23 and 24 have been added. Support for the claims can be found in the specification. No new matter has been introduced.

Claim 21 was rejected under 35 U.S.C. §103(a) as being unpatentable over Yoshiaki (JP 63-297949) in view of Redmond (U.S. Patent Number 4,246,753) or Kiyoshi (JP 2000-291525). Claims 21 and 22 were rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 8 and 9 of U.S. Patent No. 6,698,223.

Reconsideration of the rejected claims in view of the foregoing amendments and following remarks is respectfully requested.

Independent claim 21 is directed to a system provided with the system collaboration unit, (e.g., the system of Fig. 5). Claim 21 as amended describes the energy collecting system comprising AC (alternating current) electric power generator 13. Furthermore, it should be noted that the present embodiment differs from that of the combination of the Yoshiaki and Redmond or Kiyoshi references in that the energy collecting system of the claimed embodiment comprises an inverter and a system collaboration unit.

**The Claimed Invention**

As shown in Figure 5 of the present invention, water wheel 12 and AC power generator 13 are connected directly to each other in order to reduce the overall size of the water wheel generator. Since the rotational speed of the water wheel changes according to the strength of the water power, the rotational speed of the AC electric power generator connected directly to the water wheel also changes. As a result, the output voltage and the frequency of the AC electric power generator also changes, and the output of the AC electric power may not be considered stable. In the present embodiment, the AC electric power generated by the AC electric power generator can be transformed into the desired voltage and the desired frequency to utilize the electric power efficiently.

In addition, the energy collecting system of the present embodiment comprises a system collaboration unit. Therefore, if the generated AC electric power is not great enough, the AC electric power can be supplied from a commercial electric power source. If the AC electric power is sufficient for the small load, the surplus electric power can be fed-back from an inverter to the commercial electric power source through the system collaboration unit. In general, in the feedback to the commercial electric power source through the system collaboration unit, it is necessary to satisfy predetermined criteria, such as the voltage and frequency criteria, of the feedback electric power. Accordingly, it is necessary to feedback the AC electric power to the commercial electric power source through the system collaboration unit to transform the AC electric power into the desired voltage and the desired frequency.

Differences Between the Claimed Invention and the References

With regard to Yoshiaki in view of Redmond, an inverter for transforming the electric power generated by the electric power generator into the desired voltage and the desired frequency is not disclosed.

Furthermore, both references do not teach or suggest output AC electric power being transformed into a desired voltage and a desired frequency. Therefore, the combination of both references does not refer to the same system collaboration as recited in claim 21.

Redmond relates to a system which generates the electric power by utilizing the falling energy of groundwater and is different from the claimed invention. In the Kiyoshi reference, a DC (direct current) electric power generator is disclosed. An inverter converts the DC electric power of the DC electric power generator into AC electric power. Thus, Kiyoshi does not teach or suggest the inverter of the claimed invention for transforming the AC electric power into a desired voltage and a desired frequency.

For at least the foregoing reasons, independent claim 21 as amended and claim 22 depending therefrom are patentable.

Nonstatutory Double Patenting Rejection

Applicants respectfully submit that claim 21 as amended is patentably distinct from claims 8 and 9 of U.S. Patent No. 6,698,223. Claim 21 as amended discloses an energy collecting system comprising an AC (alternating current) electric power generator driven by the

waterwheel to generate AC electric power. Claims 8 and 9 of U.S. Patent No. 6,698,223 do not discuss an AC electric power generator driven by a waterwheel to generate AC electric power. In addition, claim 21 as amended clearly omits the element of "a motor for driving the primary cool/warm water pump" which is specified in claim 1 of U.S. Patent No. 6,698,223, which claims 8 and 9 depend therefrom. As specified in §2144.04 of the MPEP in Section B, "the omission of an element and retention of its function is an indicia of unobviousness." Claims 21-24 omit the element of a motor for driving the water pump. For at least the foregoing reason, independent claim 21 as amended and claim 22 depending therefrom, as well as claims 23 and 24, are patentable.

#### CONCLUSION

In view of the foregoing, Applicants believe all claims now pending in this Application are in condition for allowance. The issuance of a formal Notice of Allowance at an early date is respectfully requested.

If the Examiner believes a telephone conference would expedite prosecution of this application, please telephone the undersigned at 650-326-2400.

Respectfully submitted,



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FIG. 12  
PRIOR ART

